

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

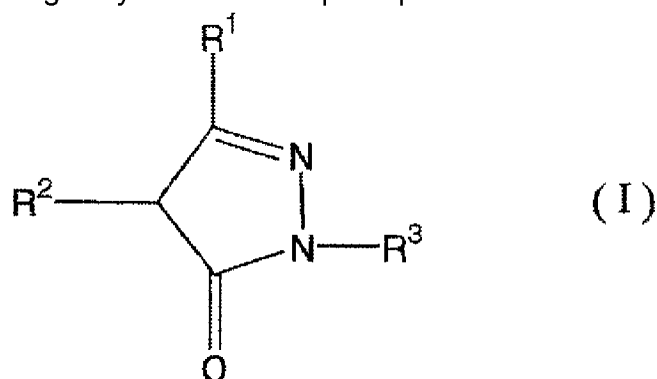
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1]

Oxidation stress inhibitor which contains a pyrazolone derivative shown by following formula (I), or its salt permitted pharmacologically as an active principle.



(Among a formula, R¹ expresses a hydrogen atom, an aryl group, an alkyl group of the carbon numbers 1-5, or an alkoxycarbonyl-alkyl group of the total carbon numbers 3-6, and; R²) Express a hydrogen atom, an aryloxy group, an aryl sulfhydryl group, an alkyl group of the carbon numbers 1-5, or a hydroxyalkyl group of the carbon numbers 1-3, and;. Or R¹ and R², Express an alkylene group of the carbon numbers 3-5 jointly, and; R³, A hydrogen atom, an alkyl group of the carbon numbers 1-5, a cycloalkyl group of the carbon numbers 5-7, A hydroxyalkyl group of the carbon numbers 1-3, benzyl, a naphthyl group, or unsubstituted, Or an alkyl group of the carbon numbers 1-5, an alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxycarbonyl group of the total carbon numbers 2-5, an alkyl sulfhydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different is expressed.

[Claim 2]

In formula (I), R¹ is an alkyl group of the carbon numbers 1-5, R² is a hydrogen atom and R³ An alkyl group

of the carbon numbers 1-5, An alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxycarbonyl group of the total carbon numbers 2-5, an alkyl sulfhydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, The oxidation stress inhibitor according to claim 1 which is the phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different.

[Claim 3]

The oxidation stress inhibitor according to claim 1 or 2 which contains 3-methyl-1-phenyl-2-pyrazoline 5-one or its salt permitted pharmacologically as an active principle.

[Claim 4]

The oxidation stress inhibitor according to any one of claims 1 to 3 used as medicine for a therapy of a disease which induces, advances or gets worse by oxidant stress, and/or prevention.

[Claim 5]

The oxidation stress inhibitor according to claim 4 which is a disease accompanied by a rise of mono-unsaturated fatty acid, ubiquinone 10, or cholesterol ester hydroperoxide in a disease which induces, advances or gets worse by oxidant stress.

[Claim 6]

The oxidation stress inhibitor according to any one of claims 1 to 5 which controls oxidant stress by controlling mono-unsaturated fatty acid in plasma, ubiquinone 10, or cholesterol ester hydroperoxide.

[Claim 7]

A measuring method of oxidant stress using mono-unsaturated fatty acid, ubiquinone 10, or cholesterol ester hydroperoxide in plasma as a marker.

[Claim 8]

A measuring method of the oxidant stress according to claim 7 whose mono-unsaturated fatty acid is oleic acid (18:1) and/or palmitoleic acid (16:1).

[Claim 9]

A measuring method of the oxidant stress according to claim 7 or 8 which performs measurement of mono-unsaturated fatty acid, ubiquinone 10, or cholesterol ester hydroperoxide with a liquid chromatography method.

[Claim 10]

A clinical examination method analyzing or evaluating symptoms of a disease which measures content of mono-unsaturated fatty acid in a test subject's plasma, ubiquinone 10, or cholesterol ester hydroperoxide, and induces, advances or gets worse by oxidant stress from the measured value.

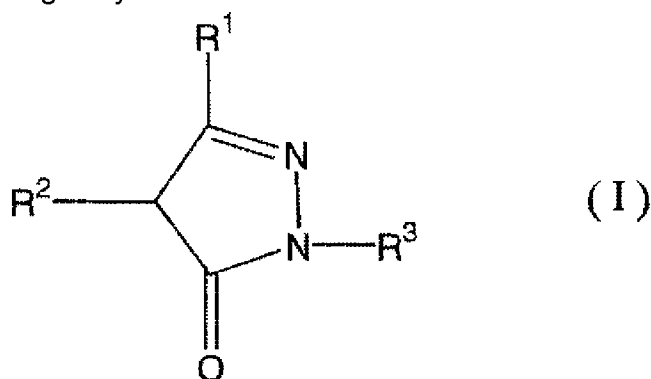
[Claim 11]

How to evaluate the validity of oxidant stress depressant action in which the included drugs concerned have measuring content of mono-unsaturated fatty acid in plasma of a test subject who prescribed for the patient drugs expected to have oxidant stress depressant action, ubiquinone 10, or cholesterol ester hydroperoxide.

[Claim 12]

A way according to claim 11 drugs are a pyrazolone derivative shown by following formula (I), or its salt

permitted pharmacologically.



(Among a formula, R^1 expresses a hydrogen atom, an aryl group, an alkyl group of the carbon numbers 1-5, or an alkoxycarbonyl-alkyl group of the total carbon numbers 3-6, and; R^2) Express a hydrogen atom, an aryloxy group, an aryl sulfhydryl group, an alkyl group of the carbon numbers 1-5, or a hydroxyalkyl group of the carbon numbers 1-3, and;. Or R^1 and R^2 , Express an alkylene group of the carbon numbers 3-5 jointly, and; R^3 , A hydrogen atom, an alkyl group of the carbon numbers 1-5, a cycloalkyl group of the carbon numbers 5-7, A hydroxyalkyl group of the carbon numbers 1-3, benzyl, a naphthyl group, or unsubstituted, Or an alkyl group of the carbon numbers 1-5, an alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxycarbonyl group of the total carbon numbers 2-5, an alkyl sulfhydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different is expressed.

[Claim 13]

In formula (I), R^1 is an alkyl group of the carbon numbers 1-5, R^2 is a hydrogen atom and R^3 An alkyl group of the carbon numbers 1-5, An alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxycarbonyl group of the total carbon numbers 2-5, an alkyl sulfhydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A method according to claim 12 of being the phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different.

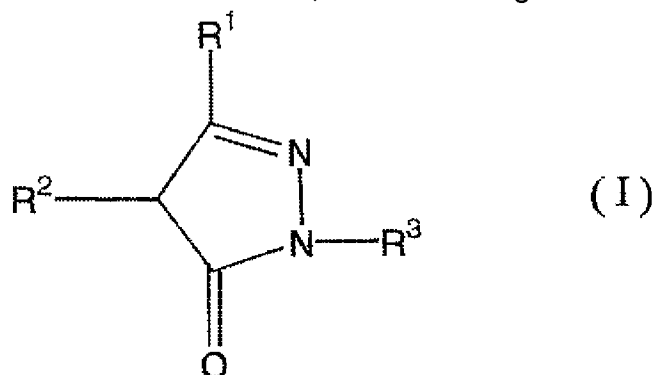
[Claim 14]

A way according to claim 12 or 13 a pyrazolone derivative shown by formula (I) or its salt permitted pharmacologically is 3-methyl-1-phenyl-2-pyrazoline 5-one or its salt permitted pharmacologically.

[Claim 15]

Mono-unsaturated fatty acid in plasma of a patient expected to have trouble with his disease which induced, advanced or gets worse by oxidant stress, Content of ubiquinone 10 or cholesterol ester hydroperoxide is measured, Symptoms of a disease which induces, advances or gets worse by oxidant stress from the

measured value are analyzed or evaluated, As a result, medicine prescribing for the patient a pyrazolone derivative shown by following formula (I), or its salt permitted pharmacologically to a patient judged to have trouble with one's disease which induced, advanced or gets worse by oxidant stress.



(Among a formula, R^1 expresses a hydrogen atom, an aryl group, an alkyl group of the carbon numbers 1-5, or an alkoxycarbonyl-alkyl group of the total carbon numbers 3-6, and; R^2) Express a hydrogen atom, an aryloxy group, an aryl sulfhydryl group, an alkyl group of the carbon numbers 1-5, or a hydroxyalkyl group of the carbon numbers 1-3, and;. Or R^1 and R^2 , Express an alkylene group of the carbon numbers 3-5 jointly, and; R^3 , A hydrogen atom, an alkyl group of the carbon numbers 1-5, a cycloalkyl group of the carbon numbers 5-7, A hydroxyalkyl group of the carbon numbers 1-3, benzyl, a naphthyl group, or unsubstituted, Or an alkyl group of the carbon numbers 1-5, an alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxycarbonyl group of the total carbon numbers 2-5, an alkyl sulfhydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different is expressed.

[Claim 16]

The medicine according to claim 15 in which a pyrazolone derivative shown by formula (I) or its salt permitted pharmacologically is 3-methyl-1-phenyl-2-pyrazoline 5-one or its salt permitted pharmacologically.

[Translation done.]